

Docket No.: SUGIM. 01AUS

Customer No.: 20,995

AMENDMENT / RESPONSE TRANSMITTAL

Applicant : Koichi Mukasa, et al.
App. No. : 09/851,261
Filed : May 8, 2001
For : LASER WELDING HEAD-
CONTROLLING SYSTEM, A
LASER WELDING HEAD
AND A METHOD FOR
CONTROLLING A LASER
WELDING HEAD

Examiner : Len Tran
Art Unit : 1725

CERTIFICATE OF MAILING

I hereby certify that this correspondence and all marked attachments are being deposited with the United States Postal Service as first-class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on

August 18, 2003

(Date)

Katsuhiro Arai, Reg. No. 43,315

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Transmitted herewith for filing in the above-identified application are the following enclosures:

- (X) Response to the Office Action in three (3) pages.
- (X) The present application qualifies for small entity status under 37 C.F.R. § 1.27.

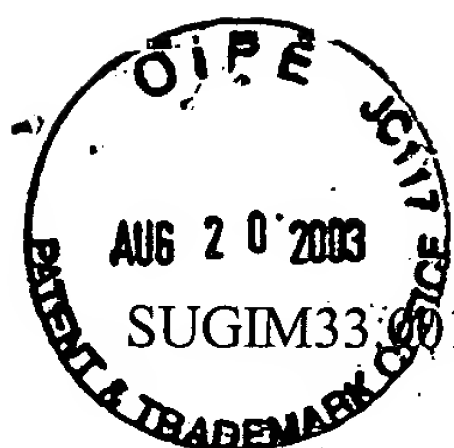
The fee has been calculated as shown below:

FEE CALCULATION				
FEE TYPE		FEE CODE	CALCULATION	TOTAL
Total Claims	11 - 20 = 0	2202 (\$9)	0 x 9 =	\$0
Independent Claims	4 - 4 = 0	2201 (\$42)	0 x 42 =	\$0
			TOTAL FEE DUE	\$0

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Katsuhiro Arai
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Examiner : L. Tran)

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RESPONSE TO THE OFFICE ACTION

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This is in response to the Office Action mailed June 24, 2003. Applicant respectfully requests reconsideration of the present application in light of the following comments.

Rejection under 35 U.S.C. § 103

Claims 1-3, 7, 9 and 10 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 04-055078A (JP '078) and further in view of JP 2000-042769 (JP '769). Claims 4-6, 8 and 11 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over JP '078 and further in view of US 5,938,446 (Anderson).

Applicant respectfully traverses the above rejections as follows:

The Examiner asserts that JP '078 discloses plural semiconductor lasers for measuring a welding state. However, the Examiner's understanding is not correct. As is seen in the figure and abstract of JP '078, this system is for detecting a welding line only. That is, the

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semiconductor lasers 28, 33 are disposed upstream of a welding head 23 and used to detect a welding line 22 before the seam is welded. It is impossible to measure a welding state (because welding has not occurred). JP '078 simply teaches positioning control of a welding head. In contrast, in the present invention, the semiconductor lasers are disposed for measuring a welding state. In an embodiment as shown in Fig. 1, a welding laser 6 is disposed between semiconductor lasers 2, 3, wherein a welding state and a welding line can be evaluated.

Further, JP '078 fails to disclose a CCD camera with a band-pass filter to pass through only linear laser beams from the semiconductor lasers.

JP '769 detects a welding state by using solely the welding laser beam. This is not for detecting a welding line as taught by JP '078. In JP '769, a CCD camera may be used to receive a reflecting laser beam from the welding laser. Because of using the reflecting laser beam from the welding laser which is the only laser and much more powerful than semiconductor lasers, signal-processing systems are dissimilar to those using multiple semiconductor lasers separately from a welding laser. Please note that although the Examiner asserts that JP '769 discloses a band-pass filter to change into the voltage signal according to light receiving intensity with the photodiode and amplifier, that is not a function of a band pass filter and also that is not called a band pass filter in JP '679. Band pass filters used in JP '679 may be numerals 17 and 18. JP '769's band-pass filter is irrelevant to pass through only linear laser beams from semiconductor lasers. The welding state measuring method of the present invention is very different from that of JP '769.

A combination of JP '078 and JP '769 could not reasonably be accomplished because JP '078 detects a welding line only, by using two semiconductor lasers separately from a welding laser, whereas JP '769 detects a welding state by using a single welding laser. The purposes of these systems are different and the mechanisms are different, and thus a combination of these could not reasonably be accomplished.

Further, even if these references are combined (i.e., JP '078 includes a CCD camera with a band-pass filter), JP '078 still cannot measure a welding state.

Thus, the present invention could not be obvious over JP '078 in view of JP '679. Applicant respectfully requests withdrawal of this rejection.

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Claims 1, 3, 7 and 10 are independent and the remaining claims are dependent ultimately on either one of them. As explained above, the dependent claims could not be obvious over the references, and thus, at least for this reason, the Examiner's rejection of Claims 4-6, 8 and 11 based on JP '078 in view of Anderson should be overcome. In fact, Anderson does not teach the above-explained features of the present invention.

CONCLUSION

In light of the Applicant's foregoing Remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

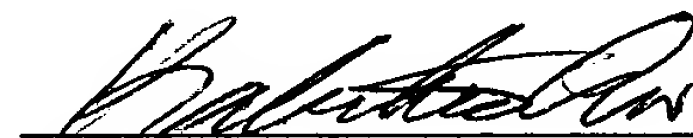
Please charge any fees to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: August 18, 2003

By:



Katsuhiro Arai

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